

REMARKS

Applicant has amended the specification to correct typographical errors and to secure correspondence between the specification and the figures.

Claims 11, 14, 25-26 have been amended for clarity and thus for reasons unrelated to patentability.

New Claim 30 has been added. Support for new Claim 30 appears in the specification at least at page 12, lines 11-12.

Examiner Interview Summary

Applicant hereby acknowledges the examiner interview between the Examiner, John Q Chavis, and the Attorney for Applicant, Serge Hodgson, on February 3, 2005. During the examiner interview, the Examiner indicated that Park (2003/0079212) was erroneously listed in heading 2 at page 2 of the Office Action. The Examiner stated that Claims 1-5, 10-18, 21, and 27-29 stand rejected under 35 U.S.C. 102(b) as being anticipated by Goebel (5,901,317), not Park (2003/0079212). Further, the Examiner clarified that Goebel listed in heading 4 at page 4 of the Office Action is Goebel (5,901,317). The Examiner requested that the substance of the examiner interview be set forth in the response to the Office Action and so the examiner interview summary is hereby provided. If any further action is required on the part of Applicant with respect to the examiner interview, the Examiner is respectfully requested to contact the undersigned Attorney for Applicant.

The headings below are numbered to correspond with the heading numbering used by the Examiner in the Office Action.

1-2) Claims 1-5, 10-18, 21, and 27-29 are novel over a Goebel (5,901,317).

Applicant notes that Claim 1 recites:

A method comprising:

adding direction to interference edges of a register interference graph; and  
choosing a node of said register interference graph to spill based upon a pass degree of said node.  
(Emphasis added.)

With respect to Claim 1, the Examiner asserts that Goebel teaches:

See the abstract and col. 3 lines 21-27, **which adds vectors (direction) to interference edges...** (Office Action, page 2, emphasis added.)

The Examiner's statement is respectfully traversed. As discussed further below, Goebel teaches primary edges and secondary edges between nodes of an interference graph. However, the Examiner has failed to callout where Goebel teaches or suggests that the primary or secondary edges have direction.

Specifically, as cited by the Examiner at col. 3 lines 21-27 of Goebel:

Interference graph 10 of FIG. 1 is actually constructed during compile time by assigning a pair of vectors to each node: **one vector representing primary links** and the other **vector representing the secondary links**. Although the interference graph of FIG. 1 illustrates only three nodes for simplicity and clarity, it is understood that many nodes typically exist in a given interference graph. (Emphasis added.)

Further, Goebel discusses the primary links and secondary links of the interference graph of FIG. 1:

Nodes 12 and 14 are joined by a **first primary edge 13 denoting common latency between the contents of these two registers**. Similarly, nodes 12 and 16 are joined by a **primary edge 15 illustrating common latency between the contents of these two registers**. In addition, nodes 12 and 14 are joined by a **secondary edge 17 denoting a secondary conflict between the contents of these two nodes**. The secondary conflict is a conditional conflict: i.e., one which can be tolerated but which,

if avoided, will optimize the assignment of real registers to the virtual registers at nodes 12 and 14. (Col. 3, lines 4-13, emphasis added.)

Thus, as set forth above, Goebel teaches vectors that represent primary edges denoting common latency between the contents of two registers and secondary edges denoting a secondary conflict between the contents of two nodes. However, the Examiner has failed to callout where Goebel teaches or suggests adding **direction** to either the primary or secondary edges.

For at least the above reasons, Goebel does not teach or suggest:

A method comprising:  
**adding direction to interference edges of a register interference graph; and**  
choosing a node of said register interference graph to spill based upon a pass degree of said node,

as recited in Claim 1, emphasis added. Accordingly, Claim 1 is allowable over Goebel. Claims 2-5, 10, and new Claim 30, which depend from Claim 1, are allowable for at least the same reasons as Claim 1.

Claims 17 and 27 are allowable for reasons similar to Claim 1. Claims 18 and 21, which depend from Claim 17, are allowable for at least the same reasons as Claim 17. Claims 28 and 29, which depend from Claim 27, are allowable for at least the same reasons as Claim 27.

For reasons similar to those discussed above, Goebel does not teach or suggest:

A method comprising:  
building a register interference graph comprising defining an interference edge between a first node and a second node;  
determining that a first variable associated with said first node is live when a second variable associate with said second node is defined or used; and  
defining **an end of said interference edge adjacent said first node as a pass edge,**

as recited in amended Claim 11, emphasis added. Accordingly, Claim 11 is allowable over Goebel. Claims 12-13, which depend from Claim 11, are allowable for at least the same reasons as Claim 11.

Claim 14 is allowable for reasons similar to Claim 11. Claims 15 and 16, which depend from Claim 14, are allowable for at least the same reasons as Claim 14.

For the above reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

3-4) Claim 6-9, 19-20, 22-26 are patentable over Goebel.

As set forth above, Claims 1 and 17 are allowable over Goebel. Claim 6-9 and Claims 19-20, 22-26, which depend from Claims 1 and 17, respectively, are allowable over Goebel for at least the same reasons as Claims 1 and 17.

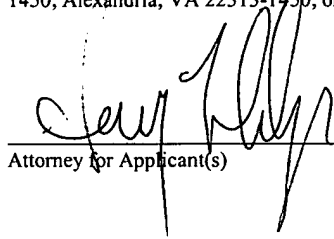
For the above reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

#### Conclusion

Claims 1-30 are pending in the application. For the foregoing reasons, Applicant respectfully requests allowance of all pending claims. If the Examiner has any questions relating to the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant(s).

#### **CERTIFICATE OF MAILING**

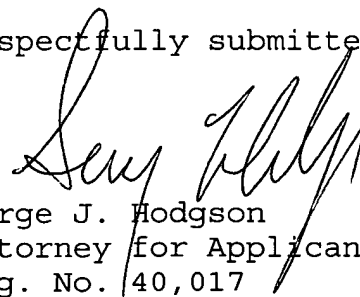
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 15, 2005.



Attorney for Applicant(s)

February 15, 2005  
Date of Signature

Respectfully submitted,



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